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LAND USE MAPPING AND MODELLING FOR THE PHOENIX QUADRANGLE

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Type I Progress Report for Period 1 September 1973 - 31 October 1973

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Also during the next reporting period, the 1:100,000 scale land use mapping from ERTS in the Phoenix area will be continued, with particular emphasis on Level II classification in the urbanized area. Uses will be mapped at the most detailed level discernible.

The land use change overlay produced using ERTS imagery will be updated as later ERTS images are received, and better understanding is acquired of seasonal vegetation changes.

e. Scientific results and practical applications:

In comparing the land use changes from the overlay as detected from ERTS and the high altitude change overlay, total areas of change were of the same magnitude. The clusterings or distributions of changes on both of the overlays were quite similar. The greatest variations were a result of differences in dates and areas of coverage between ERTS images and aerial photographs.

Separation of citrus from other agricultural land has been moderately successful in the ERTS 1:100,000 scale Level II land use mapping around Phoenix, although accuracy estimates are not yet available. No feeding operations have been detected from ERTS so far. Preliminary indications are that commercial and services, industrial, and institutional land are not separable from each other using present image interpretation techniques. Urban open areas such as parks and golf courses are readily detectable, particularly when local maps are consulted even though out-of-date. Strip and clustered settlements may be detected depending upon their size and contrast with the surrounding area on the ERTS image.

f. Published reports and talks:

At GSFC on October 25, the Land Use Review Panel of NASA was briefed as to the progress of this investigation.

g. Recommendations for improvement:

Supplying investigators with selected color composite imagery definitely increases their ability to extract photo interpretable data. However, lack of careful registration of the land images used to create the composite seriously limits the effectiveness of the product. Better quality control in the production of retrospectively ordered color composite images would allow investigators to gleen the maximum amount of data from the imagery.

Type I Progress Report

ERTS-1
1 September 1973 - 31 October 1973

a. Land Use Mapping and Modelling for the Phoenix Quadrangle.
(ERTS-A Proposal SR-186)

b. IN-057

c. Statement and explanation of any impedance.

Nearly all impedances have been eliminated. Lack of recent aerial photography over the southern 10% of the Phoenix Quadrangle limits accuracy checks of ERTS interpretations.

d. Accomplishments during the reporting period and those planned for the next period:

In connection with the review of ERTS-1 Investigations Status by the Land Use Panel at Godddard Space Flight Center on October 25, 1973, two overlays were prepared for the 1:250,000 scale land use map of the Phoenix Quadrangle. These overlays covered the eastern half of the test site, including the metropolitan Phoenix area within the Quadrangle. Level I land use changes were mapped. The first overlay shows land use changes detected from high-altitude aerial photography for the period November 1970 to November 1972. The second overlay shows land use changes detected from ERTS imagery for the period November 1970 to May 1973.

Work has begun on the production of Level II land use overlay covering most of the eastern third of the test site, including metropolitan Phoenix and the surrounding area. The overlay is being compiled on a 1:100,000 scale print base made from a portion of an ERTS color composite image. Land use will be mapped with as much detail, i.e., second level, as possible, although all Level II categories may not be interpretable.

A tabulation of all data in the Phoenix Quadrangle data bank and an automatic plot of land use and related factors have been produced. Initial checks have been made to determine errors in the data bank. Changes detected by ERTS will be entered into the data bank during the next reporting period, and a new updated land use map will be plotted out.

- Changes in Standing Order Forms:

  None

- ERTS Image Descriptor Forms:

  No new descriptors have been detected.

- Changed Data Request Forms Submitted to Goddard Space Flight Center/ NDPF:

  An ERTS Data Request Form was submitted to Goddard Space Flight/ NDPF on September 24, 1973. MSS color composite transparencies were ordered retrospectively.